

1. Find the exact value of each trig expression.

a. $\csc\left(-\frac{11\pi}{4}\right)$

b. $\cot\left(-\frac{8\pi}{3}\right)$

c. $\cot\left(\frac{5\pi}{6}\right)$

d. $\csc\left(\frac{23\pi}{3}\right)$

2. If $\tan \theta = \frac{4}{3}$ and $\pi \leq \theta \leq \frac{3\pi}{2}$, find the values of the other 5 trig functions. Draw a diagram to assist with the problem.

3. Graph the given trig function. State or label all key features of the graph.

a. $y = 2 \cos(4x) - 1$

b. $y = -\sin\left(2\left(x - \frac{\pi}{2}\right)\right)$

4. Verify the given trig identity.

a. $\cos x + \sin x \tan x = \sec x$

b. $\frac{1-\sin x}{\cos x} + \frac{\cos x}{1-\sin x} = 2 \sec x$

c. $(\tan x + \cot x)^2 = \sec^2 x + \csc^2 x$

d. $\cot x + \tan x = \sec x \csc x$

5. Given $f(x) = 2x - 1$, $g(x) = x^2 + x$ and $h(x) = (5x - 7)/6$ find:

a. fg

b. $f(g(x))$

c. $h^{-1}(x)$

6. Write each of the following in the form $y = ab^x$

a. $y = 121(3^{4x-3})$.

7. Solve.

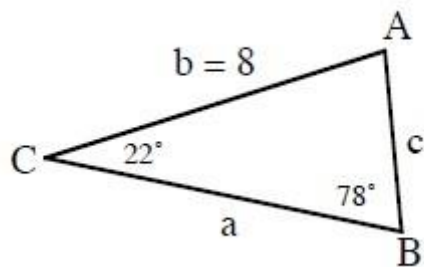
a. $\log(x) + \log(x-2) = \log_3 27$ b. $5 * 2^{x+3} - 9 = 31$

b. $5 * 2^{x+3} - 9 = 31$

8. Simplify. $\frac{10}{x-y} - \frac{6y}{x^2-y^2}$

9. Simplify.

a. $\sqrt[3]{648a^5b^9}$ b. $\log_5 125$



10. Solve the Triangle; find Area

11. factor completely: $x(x-5)^4 - 14(x-5)^3$